Final

ACTION MEMORANDUM FOR A TIME-CRITICAL REMOVAL ACTION AT IRP SITE 9 STOCKPILE B

Naval Base Ventura County
Construction Battalion Center Port Hueneme, California

September 15, 2004

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
San Diego, California

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ACRONYMS AND ABBREVIATIONS

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
bgs	Below ground surface
Ca-HSC	*California Health and Safety Code*
CBC	Construction Battalion Center
CCR	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
DTSC	California Environmental Protection Agency Department of Toxic Substances Control, Region 4
EE/CA	Engineering evaluation/cost analysis
ELCR	Excess lifetime cancer risk
EPA	U.S. Environmental Protection Agency
FS	Feasibility study
IRP	Installation Restoration Program
mg/kg	Milligrams per kilogram
Navy	U.S. Department of the Navy
NBVC	Naval Base Ventura County
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PCB	Polychlorinated biphenyl
PRC	PRC Environmental Management, Inc.
PRG	Preliminary remediation goal
RAW	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
ROD	Record of decision
RWQCB	California Regional Water Quality Control Board, Los Angeles Region
TCRA	Time-critical removal action
Tetra Tech	Tetra Tech EM Inc.
TPH	Total petroleum hydrocarbons
TSCA	Toxic Substances Control Act

ACRONYMS AND ABBREVIATIONS (Continued)

USC	*United States Code*
VOC	Volatile organic compound
West Coast	West Coast Environmental Engineering

ACTION MEMORANDUM

Commanding Officer
Naval Base Ventura County
311 Main Road, Suite 1
Point Mugu, California 93042-5001

September 15, 2004

Subject: **Action Memorandum for a Time-Critical Removal Action at IRP Site 9 Stockpile B Naval Base Ventura County Construction Battalion Center Port Hueneme, California**

Site Status:	Non-National Priorities List
Category of Removal:	Time-Critical Removal Action
CERCLIS ID:	CA6170023323
Site ID:	Installation Restoration Program Site 9

I. PURPOSE

The purpose of this action memorandum is to document, for the administrative record, the U.S. Department of the Navy's (Navy) decision to undertake a time-critical removal action (TCRA) for contaminated soil contained in what is known as Stockpile B at Installation Restoration Program (IRP) Site 9 at Naval Base Ventura County (NBVC) at the Construction Battalion Center (CBC) in Port Hueneme, California (Figure 1). The planned action is an interim action. Chemicals at the site in soil include polychlorinated biphenyls (PCB) and metals (arsenic, cadmium, chromium, copper, and lead), which are at elevated levels compared with background levels. Volatile organic compounds (VOC), total petroleum hydrocarbons (TPH), and metals were detected in groundwater in monitoring well MW05 during the remedial investigation (RI) (PRC Environmental Management, Inc. [PRC] 1997). Further investigation of groundwater in the vicinity of Stockpile B will be conducted as part of a supplemental RI at the site currently in the planning stages.

Stockpile B is located in an industrial area and, according to NBVC's Regional Shore Infrastructure Plan (in progress), the reasonably anticipated future land use is industrial. The proposed TCRA will (1) remove soil at Stockpile B containing chemicals at concentrations that exceed U.S. Environmental Protection Agency (EPA) Region 9 industrial preliminary remediation goals (PRG) for metals (EPA 2002) and the Toxic Substances Control Act (TSCA) (Title 40 of the *Code of Federal Regulations* [CFR] 761.61[a][4]) self-implementing cleanup level for PCBs, (2) backfill areas excavated below the existing grade with clean fill, and (3) dispose of excavated soil and investigation-derived waste off site.

Legend

- Airport
- County Boundaries
- U.S. Highway
- Interstate Highways

Federal Lands

- Bureau of Land Management
- Department of Defense
- Forest Service
- National Park Service

0.2 0 0.2 0.4
Decimal Degrees

Naval Base Ventura County
CBC Port Hueneme, Port Hueneme, California
U.S. Navy, NAVFAC, Southwest Division, San Diego

FIGURE 1
INSTALLATION LOCATION MAP

Action Memorandum -TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

Fig1_Regional_Locator_Map_Revised_052504.mxd TtEMI-HE Ed Madej
Data Source: ESRI North American GIS Databases

EPA Region 9 PRGs are chemical concentrations in soil corresponding to an excess lifetime cancer risk (ELCR) of 1×10^{-6} for a particular land use. The TSCA cleanup level is the same as the PCB action level recommended by EPA in 1990 in its development of guidelines for remedial actions at Superfund sites with PCB contamination (EPA 1990a). The TSCA self-implementing cleanup level of 1.0 milligrams per kilogram (mg/kg) for high occupancy areas corresponds to an ELCR of 5×10^{-6}. The Navy and the California Environmental Protection Agency's, Department of Toxic Substances Control, Region 4 (DTSC) previously agreed to the use of the 1 mg/kg cleanup level for PCBs at CBC IRP Sites 12B and 23 (Navy 2002); DTSC and the Navy consider that agreement to be applicable to IRP Site 9.

The proposed excavation volume is 9,000 cubic yards and consists of the entire stockpile.

The plan to perform this TCRA is consistent with the following laws and regulations: (1) Title 42 of the *United States Code* (USC) Section (§) 9604(a)(1)(A), which authorizes response actions whenever any hazardous substance has been released or there is a substantial threat of such a release into the environment; (2) Title 40 CFR, Part 300.415(b), which allows the Navy as the lead agency to determine that there is a threat to public health, welfare, or the environment from a release or threat of a release of a hazardous substance, and based on that determination, take any appropriate action to abate, prevent, minimize, stabilize, mitigate, or eliminate that release or threat of release. The plan to perform this TCRA is also consistent to the extent practicable with Chapter 6.8 of the *California Health and Safety Code* (Ca-HSC) and meets the technical requirements of Ca-HSC §25323.1, the Removal Action Work Plan (RAW). The Navy is working in cooperation with DTSC to develop and implement the removal action.

No nationally significant or precedent-setting issues are related to this TCRA.

II. SITE CONDITIONS AND BACKGROUND

A. SITE DESCRIPTION

1. Removal Site Evaluation

Stockpile B at IRP Site 9 was selected for an interim action because concentrations of PCBs exceeded the TSCA self-implementing cleanup level (Title 40 CFR 761.61[a][4]) and concentrations of arsenic exceeded the industrial PRG (EPA 2002). Other metals, including cadmium, chromium, copper, and lead, are present at the site at concentrations between background and residential PRGs. Although the stockpile is not characterized fully at this time, there is a current threat of a release to the environment from PCBs and metals that requires that a removal action occur on a time critical basis. Post-removal confirmation sampling will be conducted to determine whether the removal action goals have been achieved.

2. Physical Location

The CBC is located in Port Hueneme, Ventura County, California, approximately 60 miles northwest of Los Angeles. The Pacific Ocean and residential neighborhoods of Oxnard border the base on the west. The City of Port Hueneme is located to the north and east and the Pacific Ocean is located to the south (Figure 1).

IRP Site 9, the former Burning Pit, is located on the west side of CBC Port Hueneme (Figure 2). Pennsylvania Road bounds the site on the east and Lehman Road bounds it on the south. Undeveloped land lies to the south and west.

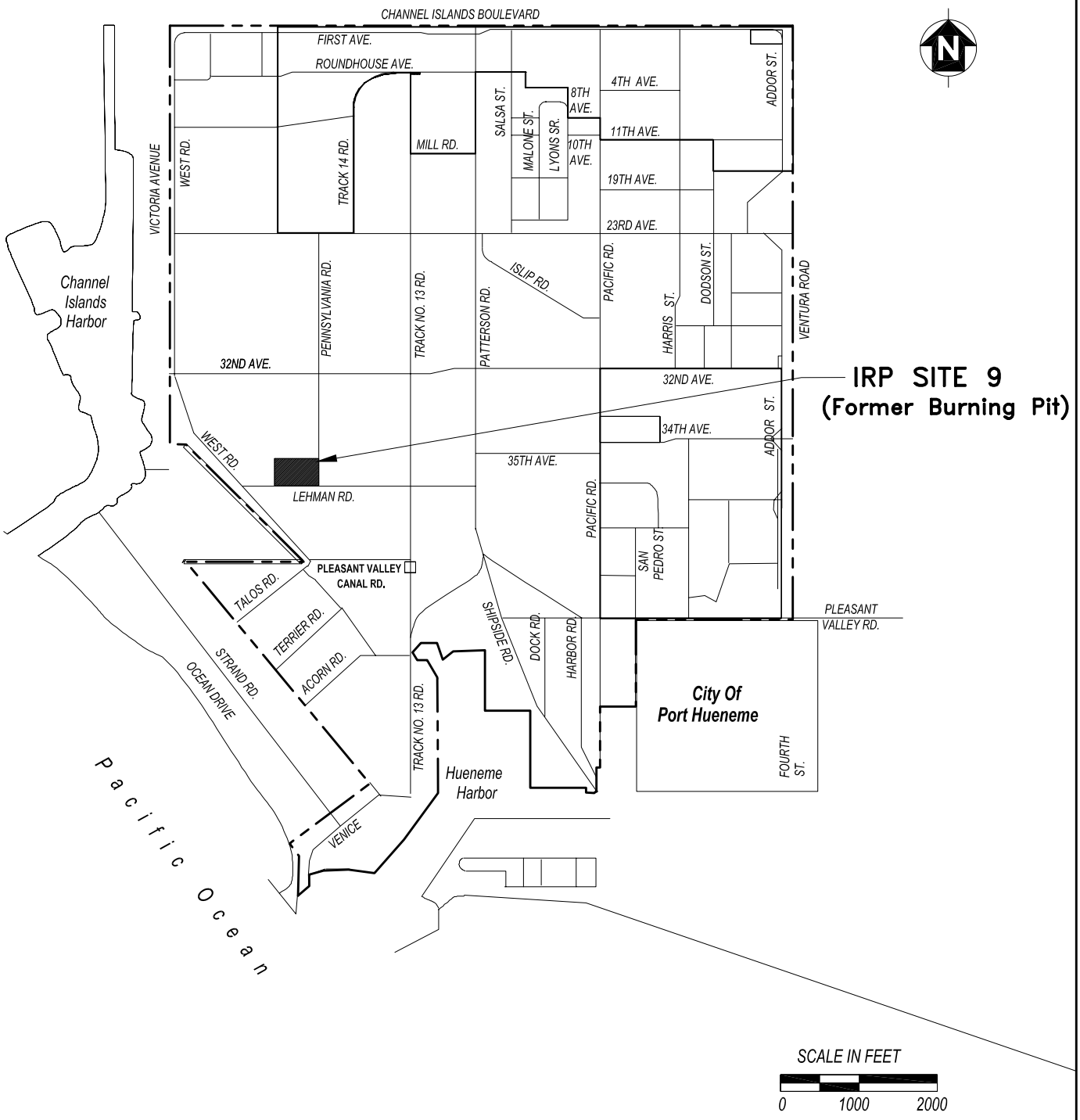
3. Site Characteristics

Port Hueneme is a deep-water port and one of the few military ports on the west coast. CBC Port Hueneme has provided integral supplies, equipment, camps, and roads to the Naval Seabees, Army, Air Force, and Marines for more than 50 years. The base was originally established in May 1942 as the Advanced Base Depot to train, stage, and supply Navy Seabees. In 1945, the base was renamed the Naval Construction Battalion Center. Almost all of the Navy construction equipment used during the Korean War was routed through the base. In October 2000, the CBC at Port Hueneme and the Naval Air Weapons Station at Point Mugu were consolidated administratively under the name "Naval Base Ventura County."

CBC Port Hueneme is an active base with no current plans for closure. IRP Site 9 is currently part of the base, which is federal property controlled by the Navy. IRP Site 9 will be redeveloped as an industrial area parking lot. There are residences, public areas, and industrial facilities located within a 1-mile radius of IRP Site 9.

The climate at CBC Port Hueneme is characterized by partly cloudy, cool summers with little precipitation and mostly clear, mild winters with moderate precipitation. The average annual precipitation in the area is about 9 inches. The precipitation occurs mostly from December through February.

IRP Site 9 comprises an area approximately 500 feet by 750 feet, previously occupied by Stockpile A, Stockpile B, and surrounded by soil berms that were 12.5 to 14 feet tall. The berms were mostly removed, but remaining portions currently rise approximately 4 feet above grade. Although these berms were located within the boundary of IRP Site 9, these berms and Stockpile A were not part of IRP Site 9. No permanent structures are within the site boundary. Another feature, also removed previously, of IRP Site 9 was a fire-fighting training pad in the northeast corner (Tetra Tech EM Inc. [Tetra Tech] 1998). The remaining soils at the site are exposed to wind and water erosion. No liner was placed under Stockpile B to prevent infiltration of precipitation to groundwater that lies approximately 10 feet below ground surface (bgs). Trench samples indicate that contamination extends below the ground surface elevation and may be at or near the groundwater surface. As a result, unknown quantities of hazardous materials may be present within the stockpile.



LEGEND

INSTALLATION BOUNDARY

NAVAL BASE VENTURA COUNTY
CBC PORT HUENEME, CALIFORNIA
U.S. Navy Southwest Division, NAVFAC, San Diego

FIGURE 2
SITE LOCATION MAP

Action Memorandum - TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

Source: Modified from PRC (1997)

2004-06-03 R:\Navy\Hueneme\G9018\0080413\ Fig2-Site Location.dwg TtEMI-SA deborah.ford

4. Release or Threatened Release

This section presents the extent of contamination and its propensity for release to the environment. Table 1 lists the proposed cleanup goals and maximum concentration found in soil for the chemicals of concern at IRP Site 9, Stockpile B. These chemicals are all classified as hazardous substances as defined by §101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

TABLE 1: CHEMICAL CONCENTRATIONS AND PROPOSED CLEANUP GOALS
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Chemical	Maximum Concentration in Soil (mg/kg)	Background Level in Soil[1] (mg/kg)	Residential PRG (mg/kg)[2]	Industrial PRG (mg/kg)	TSCA (mg/kg)
PCBs	2.1	NA	0.22[3]	0.74[3]	1.0
Arsenic	15	4.18	0.39	1.6	NA
Cadmium	71	0.53	37	450	NA
Chromium (total)	280	19.71	210	450	NA
Copper	9,970	20.48	3,100	41,000	NA
Lead	740	16.48	150	750	NA

Notes: Shaded cells indicate interim action cleanup goals were exceeded in soil samples.

1 Based on 95 percent upper confidence limit for CBC Port Hueneme background levels for metals. Because Stockpile B concentrations of arsenic, cadmium, chromium (total), copper, and lead exceed background levels, the industrial PRG is the default interim action cleanup goal.

2 Residential PRGs are presented for informational purposes. Industrial PRGs are the interim action cleanup goal for inorganic chemicals; however, the Navy may consider residential PRGs in the context of risk management decisions based on the results of post-removal confirmation sampling.

3 Residential and industrial PRGs for PCBs are presented for informational purposes. The TSCA self-implementing cleanup level of 1.0 mg/kg for high occupancy areas is the interim action cleanup goal for PCBs; however, the Navy may consider PRGs in the context of risk management decisions based on the results of post-removal confirmation sampling.

mg/kg Milligrams per kilogram
NA Not available
PCB Polychlorinated biphenyl
PRG Preliminary remediation goal (EPA 2002)
TSCA Toxic Substances Control Act (Title 40 *Code of Federal Regulations* 761.61[a][4])

The estimated quantity of soil to be excavated at the site is approximately 9,000 bank cubic yards, which includes the entire stockpile.

Chemicals in soil were identified based on data collected during two sampling efforts conducted for characterization purposes (West Coast Environmental Engineering [West Coast] 2003a, 2003b).

The mechanisms for the release of chemicals in soil at IRP Site 9 are assumed to include wind and water erosion and infiltration of chemicals to groundwater. Soils at the site are exposed to

wind and water erosion, and no liner was placed under the stockpile to prevent infiltration of precipitation to groundwater. Trench samples indicate that contamination extends below the ground surface elevation and may be at or near the groundwater surface. As a result, unknown quantities of hazardous materials may be present within the stockpile. VOCs, TPH, and metals were detected in groundwater in monitoring well MW05 during the RI (PRC 1997). Further investigation of groundwater in the vicinity of Stockpile B will be conducted as part of a supplemental RI at the site, which is currently in the planning stages.

5. National Priorities List Status

EPA has not placed CBC Port Hueneme on the CERCLA National Priorities List. However, pursuant to the Defense Environmental Restoration Program described in Title 10 USC §2701, et seq., the Navy is required to address releases of CERCLA hazardous substances in accordance with CERCLA.

6. Maps, Pictures, and Other Graphic Representations

Figure 1 shows the general location of Port Hueneme, and Figure 2 shows the general location of the site. Figures 3 through 6 present the location of IRP Site 9, area of excavation, and cross-sectional views of the soils to be removed. The figures show boring and sidewall sampling locations and slots that were trenched during exploratory digging exercises. Appendix A presents the results from the sampling exercises corresponding to the sampling locations shown on the figures.

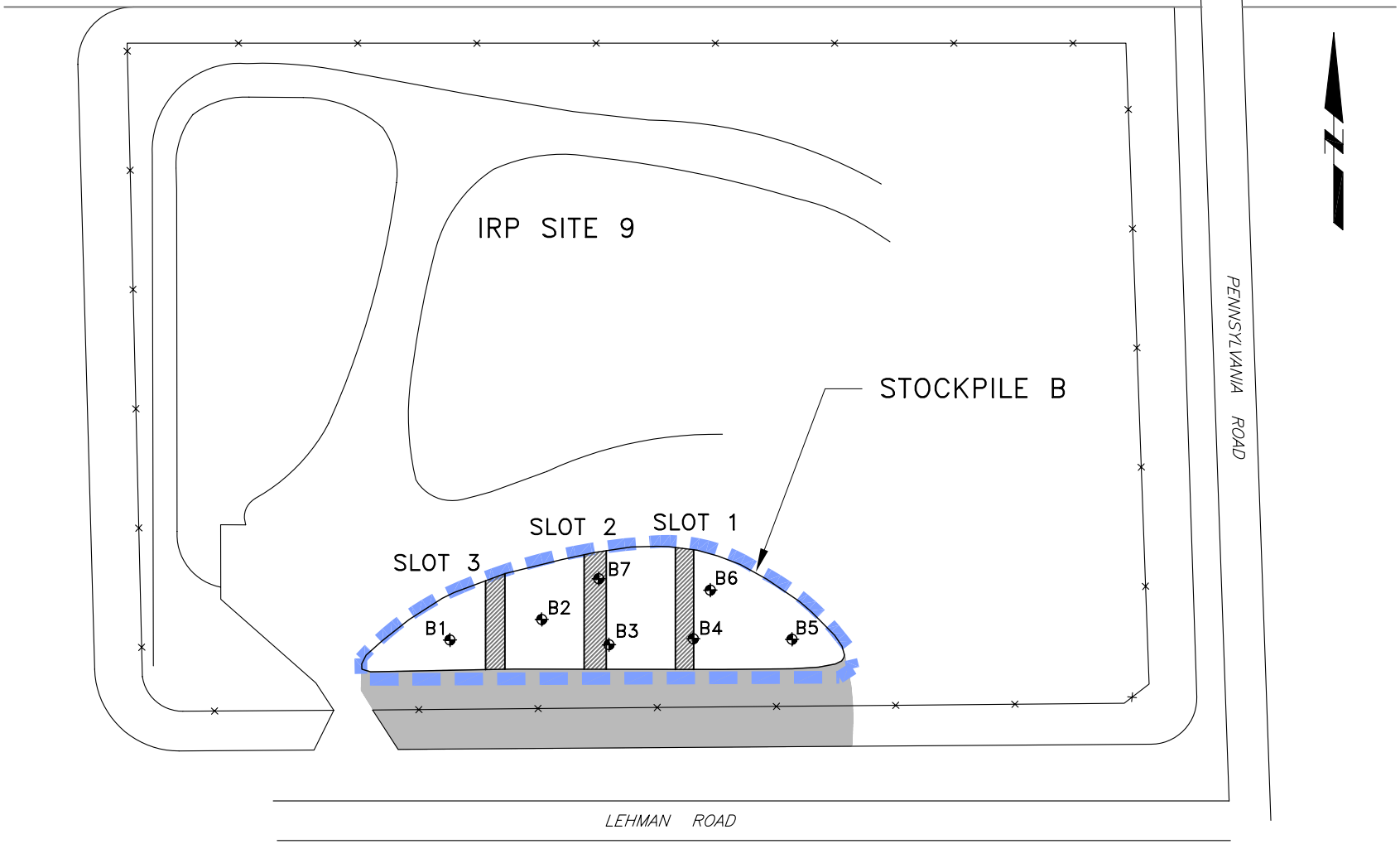
B. Other Actions To Date

1. Previous Actions

This TCRA is the first CERCLA soil removal action to be conducted at IRP Site 9. Stockpile A and berms surrounding the site were removed in a non-CERCLA action in 2003. Stockpile A and the berm were composed of uncontaminated soil. Previous investigations that have been completed at IRP Site 9 include an initial assessment study (Stearns, Conrad, and Schmidt and Landau Associates 1985), a final site inspection (Earth Technology Corporation 1991), a hazardous materials survey (Fugro-McClelland, Inc. 1991), an RI (PRC 1997), an engineering evaluation/cost analysis (EE/CA) (Tetra Tech 1998), confirmation sampling (Tetra Tech 1999), a basewide groundwater investigation (Tetra Tech and LFR Levine•Fricke 2001), field sampling (West Coast 2003a), and long-term maintenance (West Coast 2003b).

2. Current Actions

No actions are currently underway at IRP Site 9. However, remedial activities, including an RI, feasibility studies (FS), and removal actions, are in progress at various other sites at CBC Port Hueneme.



LEGEND:

- SOIL BORING
- EXCAVATION BOUNDARY
- FENCE
- BERM
- TRENCH SLOT (SEE CORRESPONDING FIGURE 4,5, OR 6)

SOURCE: WEST COAST 2003a, 2003b.

50' 0 50' 100'

SCALE: 1" = 100'

NAVAL BASE VENTURA COUNTY
CBC PORT HUENEME, CALIFORNIA
U.S. Navy Southwest Division, NAVFAC, San Diego

FIGURE 3
STOCKPILE B LOCATION MAP
Action Memorandum - TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

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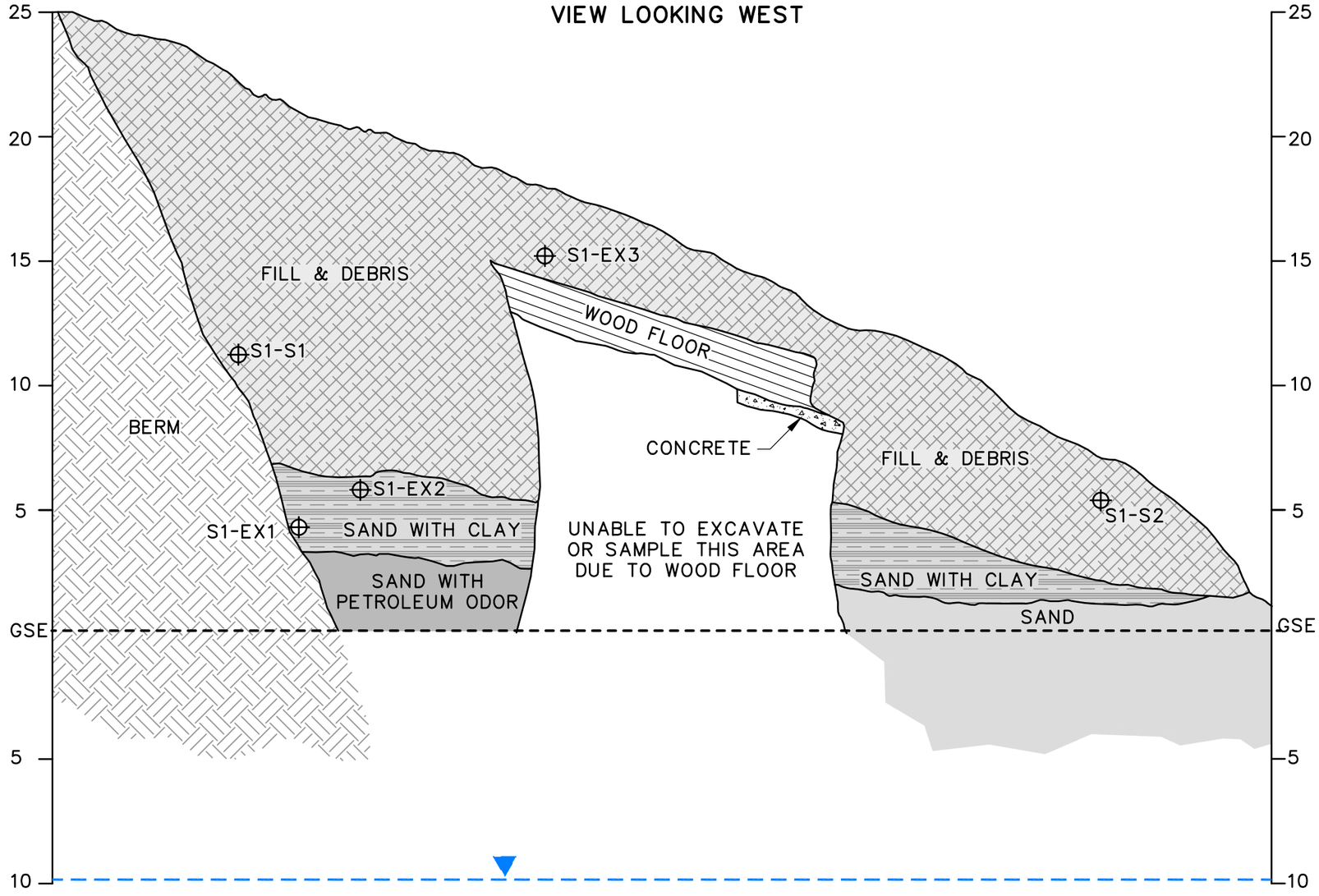

LEGEND

- ⊕ SAMPLE LOCATION
- GSE GROUND SURFACE ELEVATION, RELATIVE DATUM
- ▼ APPROXIMATE GROUNDWATER

0
2.5'
5'
0 5' 10'
APPROXIMATE SCALE

SOURCE: WEST COAST 2003b.

NAVAL BASE VENTURA COUNTY
CBC PORT HUENEME, CALIFORNIA
U.S. Navy Southwest Division, NAVFAC, San Diego

FIGURE 4
TRENCH SLOT #1
WASTE PROFILE

Action Memorandum - TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

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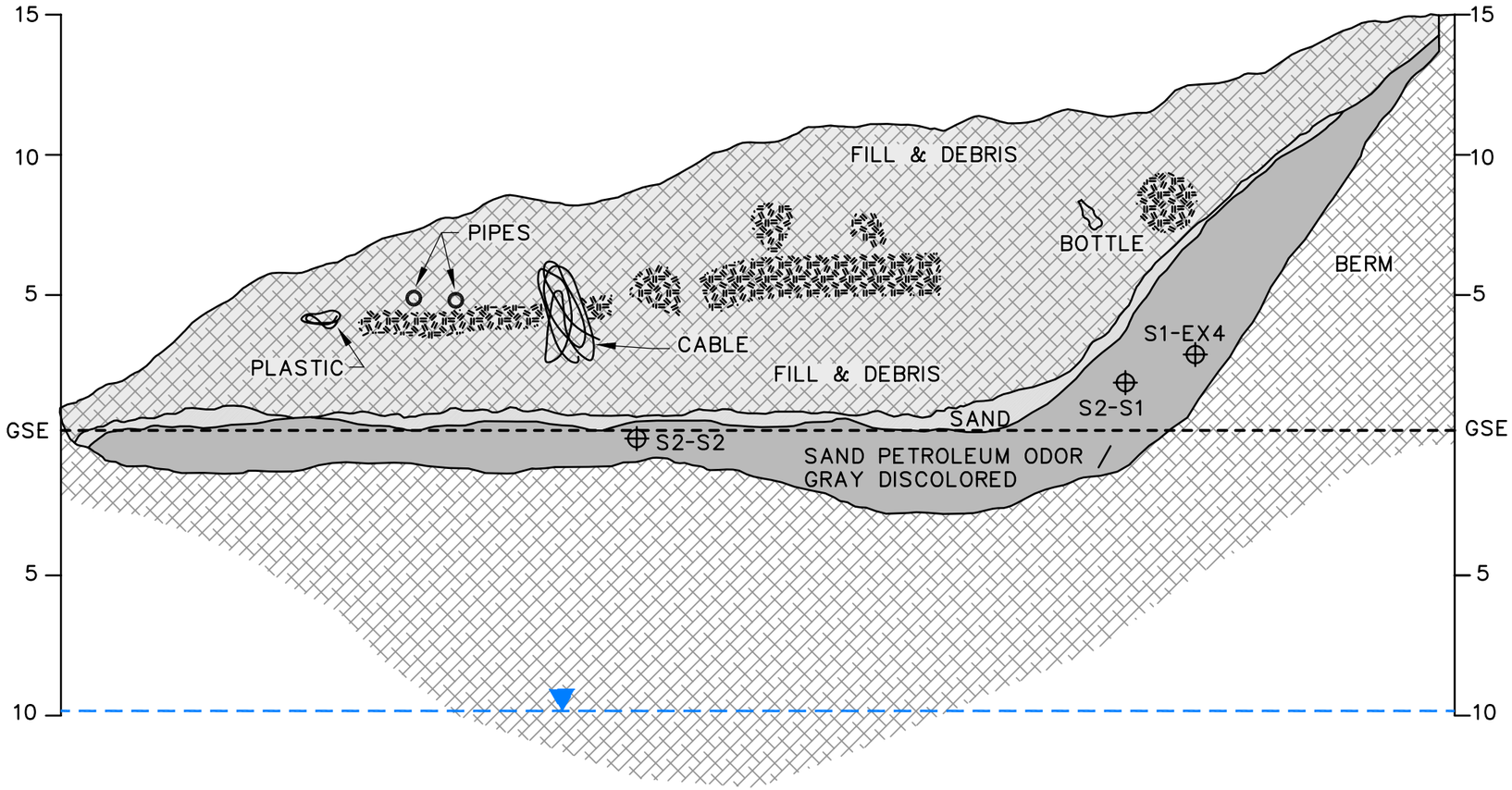
VIEW LOOKING EAST



LEGEND

- ⊕ SAMPLE LOCATION
- GSE GROUND SURFACE ELEVATION, RELATIVE DATUM
- WOOD DEBRIS
- APPROXIMATE GROUNDWATER

0 2.5' 5'
0 5' 10'
APPROXIMATE SCALE

SOURCE: WEST COAST 2003b.

NAVAL BASE VENTURA COUNTY
CBC PORT HUENEME, CALIFORNIA
U.S. Navy Southwest Division, NAVFAC, San Diego

FIGURE 5
TRENCH SLOT #2
WASTE PROFILE

Action Memorandum - TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

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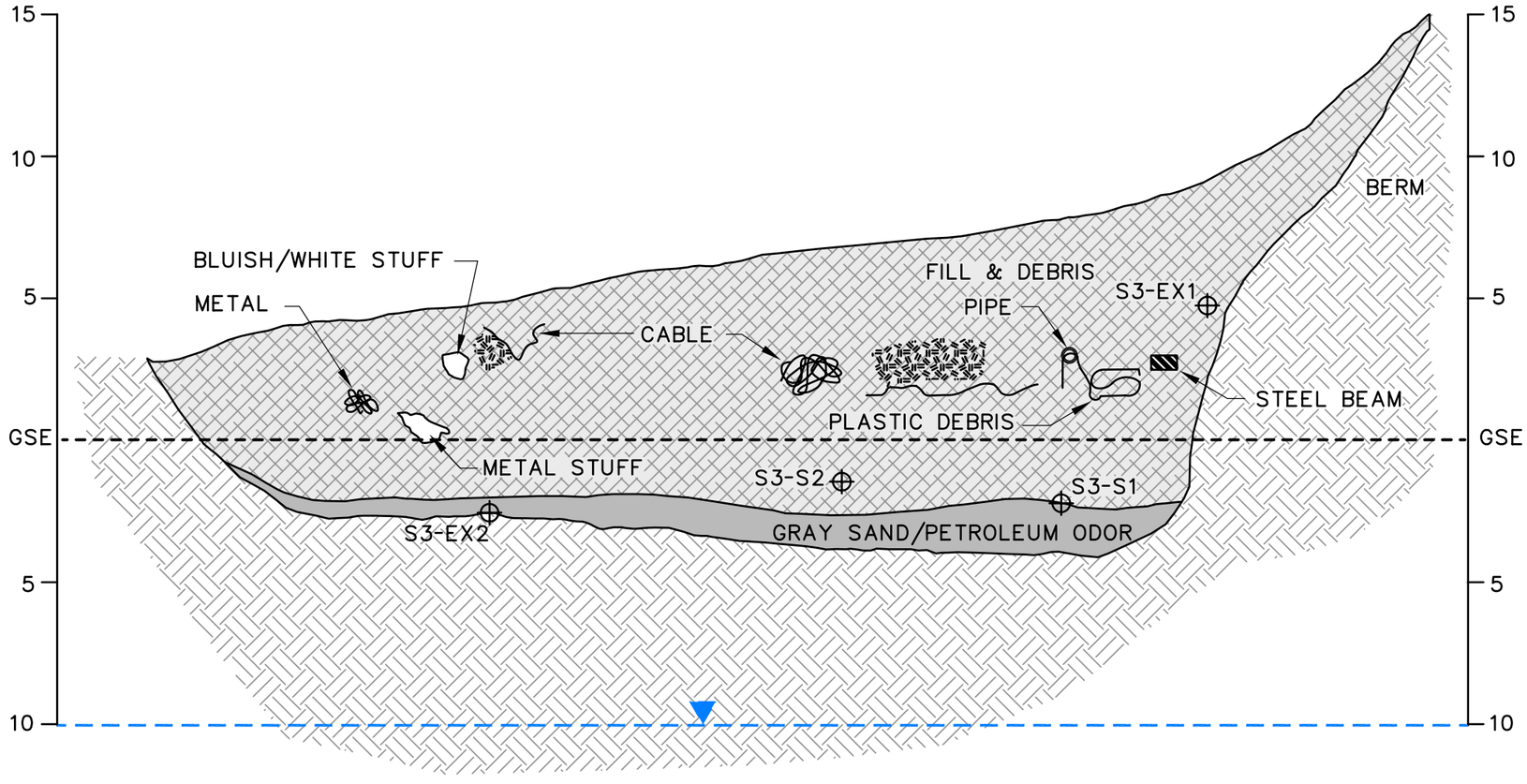
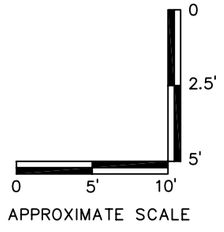
VIEW LOOKING EAST



LEGEND

- ⊕ SAMPLE LOCATION
- GSE GROUND SURFACE ELEVATION, RELATIVE DATUM
- WOOD DEBRIS
- APPROXIMATE GROUNDWATER



SOURCE: WEST COAST 2003b.

NAVAL BASE VENTURA COUNTY
CBC PORT HUENEME, CALIFORNIA
U.S. Navy Southwest Division, NAVFAC, San Diego

FIGURE 6
TRENCH SLOT #3
WASTE PROFILE

Action Memorandum - TCRA
IRP Site 9, Soil Excavation Site - Stockpile B

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C. STATE AND LOCAL AUTHORITIES' ROLES

1. State and Local Actions to Date

The DTSC and the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) have provided technical advice and regulatory oversight during the preliminary assessment and site inspection and RI/FS phases of the IRP.

2. Potential for Continued State and Local Response

IRP Site 9 is currently in the RI stage. An FS, proposed plan, and decision document will occur in the future as part of the IRP. DTSC and RWQCB will continue to provide technical advice and oversight of the CERCLA process for IRP Site 9.

III. STATUTORY AND REGULATORY AUTHORITIES AND THREATS TO PUBLIC HEALTH OR WELFARE AND THE ENVIRONMENT

The following sections discuss threats to the public health, welfare, or the environment, as well as the regulatory environment.

A. STATUTORY AND REGULATORY AUTHORITIES

CERCLA §104(a) authorizes the President to respond to the release or substantial threat of release of a hazardous substance into the environment.

Executive Order 12580 delegates the authority of the President to respond under CERCLA §104(a) to the release or threatened release of a hazardous substance to the Secretary of Defense, as lead agency, when the release or threatened release is on a facility under the jurisdiction or control of the Secretary of Defense.

The Superfund Amendments and Reauthorization Act of 1986 §211 established the Defense Environmental Restoration Program, codified at Title 10 USC §2701, et seq., which required that response actions taken to address the release or threatened release of CERCLA hazardous substances be conducted in accordance with CERCLA, Executive Orders 12580 and 13016, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Title 40 CFR Part 300).

Title 40 CFR Part 300.415(b) allows the lead agency to determine whether there is a threat to public health or welfare or to the environment and to take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release based on eight factors listed in 40 CFR Part 300.415(b)(2). These eight factors are presented below.

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chains

- Actual or potential contamination of drinking water supplies or sensitive ecosystems

- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release

- High levels of hazardous substances or pollutants or contaminants in soils at or near the surface that may migrate

- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

- Threat of fire or explosion

- The availability of other appropriate federal or state response mechanisms to respond to the release

- Other situations or factors that may pose threats to public health or welfare or the environment

B. THREATS TO PUBLIC HEALTH OR WELFARE AND THE ENVIRONMENT

The Navy, as lead agency under Executive Order 12580 and the NCP, has determined that there is a substantial threat of release of hazardous substances to the environment posed by soil in Stockpile B. The Navy found the following factors to be influential in their determination:

1. Actual or potential exposure to hazardous substances of nearby populations, animals, or food chains

2. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

The Navy considers this interim removal action to be time-critical versus non-time-critical because it is within the Navy's discretion to conduct such actions to minimize risk to public health, welfare, or the environment from releases or potential releases of hazardous substances when the release or potential release requires action in less than 6 months. The Navy has determined that chemicals are present in Stockpile B that should be removed before they disperse and affect a larger area of soil or contaminate other media. In addition, the Navy has determined that a TCRA is an efficient use of resources because Stockpile B and the action, excavation and disposal, are clearly defined. The full integration of removal and remedial authorities at a site helps advance the site to full completion of all response actions because relatively small, easily identified problems can be resolved in a removal action, thereby reducing the complexity of the site as a whole, and long-term issues can be resolved in the remedial actions.

Soil in Stockpile B contains concentrations of PCBs and arsenic that exceed industrial PRGs. These chemicals are presumed to be isolated in Stockpile B; however, Stockpile B is not covered, lined, or otherwise contained. Because Stockpile B is not contained, there is a substantial threat of migration of soil contaminants from Stockpile B beyond the boundaries of IRP Site 9.

IV. ENDANGERMENT DETERMINATION

Results of recent sampling events (West Coast 2003a, 2003b) demonstrate that current conditions at IRP Site 9, Stockpile B, may present a threat to the public health, welfare, or the environment. If actual or threatened releases of hazardous substances from IRP Site 9, Stockpile B, are not addressed by implementing the response action selected in this action memorandum, there is a substantial threat of a release to the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. PROPOSED ACTION

1. Proposed Action Description

The following actions are proposed for IRP Site 9, Stockpile B:

- Stockpile B will be removed according to the approximate excavation boundary found on Figure 3. The projected amount of soil and miscellaneous debris to be removed is 9,000 bank cubic yards.

- Future land use at the site is anticipated to be industrial, and interim action cleanup goals were selected accordingly. Stockpile B contains soils with concentrations of inorganic chemicals (arsenic, cadmium, chromium [total], copper, and lead) exceeding EPA Region 9 PRGs and PCBs exceeding the TSCA self-implementing cleanup level of 1.0 mg/kg for high occupancy areas from the ground surface to groundwater, which is approximately 10 feet bgs. Groundwater encountered during removal activities and the need for its containment shall be avoided.

- Collect 30 confirmation samples from representative locations in the sidewalls and bottom of the excavation.

- Results of the confirmation sample analyses will be documented in an on-scene coordinator's report.

- Excavated soil will be properly stockpiled to prevent runoff.

- Excavated soil will be characterized and segregated according to waste transport and disposal facility receiving requirements.

- Excavated soil will be properly disposed of off site based on waste characterization results. Off-site transportation of the excavated materials will be in accordance with CERCLA §121 (d)(3) and 40 CFR Part 300.440.

- Excavated areas will be backfilled with clean fill to existing grade and be paved as appropriate.

2. Contribution to Remedial Performance

Contaminated soils will be excavated, removed, and disposed of. The interim action will be deemed complete when all contaminated soils within Stockpile B are removed. After this TCRA is completed, residual concentrations of chemicals in soil from confirmation samples will be evaluated with respect to future anticipated land use and EPA Region 9 industrial and residential PRGs (EPA 2002) and the TSCA self-implementing cleanup level for PCBs (Title 40 CFR 761.61[a][4]). If delineated excavation results in confirmation samples are less than industrial PRGs but greater than residential PRGs or contain levels of PCBs greater than 1.0 mg/kg, the record of decision (ROD) for the site may include institutional mechanisms for maintenance of industrial land use, depending on the outcome of the feasibility for the site. If confirmation sample results from the delineated excavation are less than residential PRGs, no further action will be evaluated for the Stockpile B area and the ROD may include no restrictions for future land use of the Stockpile B area, depending on the results of ongoing evaluations of groundwater conditions at the site (Tetra Tech 2004). In the event that the TCRA cleanup goals are not achieved, the need for further action will be evaluated through risk management decisions. When residential or unrestricted land use is not achieved, institutional controls will be implemented and adhere to the California Military Environmental Coordination Committee protocols of May 5, 1998, and the 5-year review report will be subject to regulatory agencies review, comment and concurrence.

Regarding the impact this TCRA may have on groundwater contamination and remediation, during the RI, VOCs, TPH, and metals were detected in groundwater in monitoring well MW05 (PRC 1997). Further investigation of groundwater in the vicinity of Stockpile B will be conducted as part of a supplemental RI at the site, which is currently in the planning stages.

Upon completion of this interim removal action, a report will document the results of the confirmation samples and will recommend final response actions, including a no-further-action response, if appropriate. Cumulative risk of the residual chemicals of concerns remaining at IRP Site 9 will be presented in a remedial investigation report. An FS for IRP Site 9 will address remedial alternatives and the final remedial determination will be presented in a proposed plan and ROD.

3. Description of Alternative Technologies

CERCLA encourages treatment as a principal means of addressing threats from site-related contamination. However, the Navy feels that excavation and off-site disposal provide the greatest long-term effectiveness at IRP Site 9, are easily implemented, and are cost-effective

compared with on-site treatment of soil. As a result, only one practicable removal action, excavation and off-site disposal, is evaluated in this action memorandum. The paragraphs below explain how the proposed alternative meets the three selection criteria for alternative technologies: effectiveness, implementability, and cost.

The proposed interim removal action would effectively protect human health and the environment from chemicals in soil by removing contaminated soil and disposing of the soil at an off-site disposal facility while complying with chemical-specific applicable or relevant and appropriate requirements (ARAR). Furthermore, this interim removal action will be conducted in accordance with all action-specific ARARs, including sampling soil stockpiles, implementing control measures for fugitive dust emissions, and compliance with waste characterization and disposal.

The proposed interim removal action provides effective short- and long-term reduction to exposure of chemicals by removing contaminated soils from IRP Site 9. In the short-term, exposure of chemicals to removal action workers will be minimized through the proper use of engineering controls and personal protective equipment. Over the long-term, residual concentrations of chemicals at the excavation site, as shown on Figure 3, would be less than EPA Region 9 industrial PRGs from 0 to 10 feet bgs and the TSCA self-implementing cleanup level for PCBs from ground surface to groundwater. This alternative does not present any technical or administrative implementability constraints. The remedial alternative has been successfully employed at CBC and other Navy installations previously to provide protection of human health and the environment.

4. Engineering Evaluation/Cost Analysis

EE/CAs are not required for TCRAs.

5. Applicable or Relevant and Appropriate Requirements

Title 40 CFR Part 300.415(j) provides that removal actions must attain ARARs to the extent practicable considering the exigencies of the situation.

Title 40 CFR 300.5 defines applicable requirements as those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site.

Title 40 CFR Part 300.5 also defines relevant and appropriate requirements as cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility citing laws that, while not applicable to a hazardous substance, pollutant, or contaminant, remedial action, location, or other

circumstances at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Requirements that are determined to be relevant and appropriate must be complied with to the same degree as if they were applicable.

Only substantive requirements are considered ARARs. Administrative or procedural requirements such as issuance of permits, documentation, reporting, recordkeeping, and enforcement requirements are not ARARs for CERCLA actions conducted on site.

As the lead federal agency, the Navy has primary responsibility for identifying federal ARARs for the IRP Site 9 TCRA. The Navy has evaluated chemical-, action-, and location-specific ARARs for IRP Site 9. As a result, the Navy identified potential chemical- and action-specific ARARs and determined that there are no potential location-specific ARARs for IRP Site 9. The Navy also identified potential action-specific ARARs for excavating soil, temporarily storing soil, characterizing soil, and disposing of soil at an appropriate off-site facility. The potential chemical- and action-specific ARARs identified for the IRP Site 9, Stockpile B include the following:

- Resource Conservation and Recovery Act (RCRA) hazardous waste identification requirements at Title 22 of the *California Code of Regulations* (CCR) §§66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100
- RCRA land disposal requirements at Title 22 CCR §66268.1(f)
- TSCA requirements for storage and disposal of PCB remediation waste at Title 40 CFR Part 761.61(a)(4)
- RCRA hazardous waste generation requirements at Title 22 CCR §§66262.10(a), 66262.11, and 66264.13(a) and (b)
- RCRA hazardous waste staging pile requirements at Title 40 CFR Part 264.554(d), (g), (h), and (j)
- RCRA pre-transport requirements at Title 22 CCR §§66262.20 through 66262.23 and §§66262.30 through 66262.33
- RCRA hazardous waste land disposal certification requirements at Title 22 CCR §66268.7
- Ventura County Air Pollution Control District Rule 53 prohibiting the discharge of particulate matter into the atmosphere

Table 2 presents an analysis of the ARARs in more detail.

TABLE 2: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Action	Chemical Requirement	Prerequisite	Citation[a]	Preliminary ARAR Determination	Comments
Chemical-Specific					
Resource Conservation and Recovery Act (Title 42 USC, Chapter 82, §§6901 through 6991[i])[b]					
N/A	Definition of RCRA hazardous waste	Waste	Title 22 CCR §§66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These requirements are applicable for determining whether excavated soil is hazardous.
	LDRs prohibit the disposal of hazardous waste unless treatment standards are met	Hazardous waste land disposal	Title 22 CCR §66268.1(f)	Applicable	This requirement is applicable if the Navy determines that excavated soil meets the definition of RCRA hazardous waste. If the Navy determines that the soil is RCRA hazardous waste and is subject to treatment standards, the Navy will make the certification required under Title 22 CCR §66268.7.
Toxic Substances Control Act (Title 15 USC Chapter 53, §§2601-2692)[b]					
N/A	Regulates storage and disposal of PCB-laden remediation waste. There are three options: (a) self-implementing on-site cleanup and disposal, (b) performance-based disposal technologies, and (c) risk-based disposal	Soils, debris, sludge, or dredged materials contaminated with PCBs at concentrations greater than 50 ppm	Title 40 CFR Part 761.61(a)(4)	Relevant and appropriate	This requirement is not applicable because the PCB concentration in soil at Stockpile B is less than 50 ppm. The Navy will use the self-implementing cleanup option with the high occupancy and low occupancy cleanup levels and will evaluate any further action needed at IRP Site 9 based on the resulting levels of PCBs in the confirmation sampling.

TABLE 2: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
Action Memorandum for a Time-Critical Removal Action at IRP Site 9 Stockpile B, CBC Port Hueneme

Action	Chemical Requirement	Prerequisite	Citation[a]	Preliminary ARAR Determination	Comments
Action-Specific					
RCRA (Title 42 USC, Chapter 82, §§6901 through 6991[i])[b]					
Excavation	Person who generates waste will determine whether that waste is hazardous	Generator of waste	22 CCR §§66262.10(a), 66262.11	Applicable	These requirements are applicable for determining whether excavated soil is hazardous waste.
	Requirements for analyzing waste for determining whether waste is hazardous	Generator of waste	Title 22 CCR §§66264.13(a) and (b)	Applicable	These requirements are applicable for analyzing waste generated during a response action.
Land Disposal	Requires generators of hazardous waste to determine whether waste has to be treated before it can be disposed of on land; requires generators to notify treatment facility if a waste is subject to LDRs and does not meet applicable treatment standards; if the waste meets treatment standards, generators must sign a certification	Hazardous waste land disposal	Title 22 CCR §§66268.7	Applicable	These requirements are applicable if hazardous waste is to be disposed of on land.
Temporary Soil Storage	Allows generators to accumulate solid remediation waste in an EPA-designated pile for storage only for up to 2 years during remedial operations without triggering LDRs	Hazardous remediation waste (or waste otherwise subject to LDRs) temporarily stored in piles	Title 40 CFR Part 264.554(d), (g), (h), and (j)	Relevant and appropriate	These regulations present performance criteria, operational period limits, and closure requirements for temporary staging piles.
Pre-Transport Requirements	Hazardous waste must be packaged in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR §§66262.30	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Hazardous waste must be labeled in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR §§66262.31	Applicable	These requirements are applicable if hazardous waste is to be transported.

TABLE 2: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (CONTINUED)
Action Memorandum for a Time-Critical Removal Action at IRP Site 9 Stockpile B, CBC Port Hueneme

Action	Chemical Requirement	Prerequisite	Citation[a]	Preliminary ARAR Determination	Comments
Action-Specific (Continued)					
RCRA (Title 42 USC, Ch. 82, §§6901 through 6991[i])[b] (Continued)					
Pre-Transport Requirements (Continued)	Provides requirements for marking hazardous waste before transport	Any operation where hazardous waste is generated	Title 22 CCR §§66262.32	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Generator must ensure transport vehicle is correctly placarded before transport of hazardous waste	Any operation where hazardous waste is generated	Title 22 CCR §§66262.33	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Requires preparation of a manifest for transport of hazardous waste off site	Any operation where hazardous waste is generated	Title 22 CCR §§66262.20 through 66262.23	Applicable	These requirements are applicable if hazardous waste is to be transported.
Clean Air Act (Title 42 USC §§7401 through 7671)[b]					
Excavation of Soil	Prohibits discharge of solid particulate matter into the atmosphere from any source in excess of Rule 53 Table.	Discharge of solid particulate matter	Ventura County Air Pollution Control District Rule 53	Applicable	These requirements are applicable for excavation activities because dust is considered particulate matter.

Notes:

a Only the substantive provisions of the requirements cited in this table are potential ARARs.

b Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as potential ARARs; specific potential ARARs follow each general heading, and only substantive requirements of the specific citations are considered potential ARARs.

§ Section
§§ Sections
ARAR Applicable or relevant and appropriate requirement
CCR *California Code of Regulations*
CFR *Code of Federal Regulations*
DOT U.S. Department of Transportation
EPA U.S. Environmental Protection Agency
IRP Installation Restoration Program
LDR Land disposal restriction
N/A Not applicable
PCB Polychlorinated biphenyl
ppm Parts per million
RCRA Resource Conservation and Recovery Act
USC *United States Code*

6. Project Schedule

The interim removal action of IRP Site 9 Stockpile B soil is scheduled to begin after this action memorandum is signed and is anticipated to be completed within 6 months.

B. ESTIMATED COSTS

The Navy has made a present-worth estimate of the interim removal action costs. The estimated costs include the direct and indirect capital costs of the proposed interim removal action. Post-removal site control costs are not anticipated for this TCRA. The items shown below are considered capital costs.

Direct Capital Costs

Construction costs
Equipment and material costs
Transport and disposal costs
Analytical costs
Contingency allowances

Indirect Capital Costs

Engineering and design expenses

Based on an estimate from a previous TCRA for soil at another Navy installation (Tetra Tech 2000), the estimated cost per cubic yard is about $145, including direct and indirect capital costs. Assuming about 9,000 bank cubic yards will be removed, the estimated present worth total cost for the proposed action is about $1,300,000.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If action should be delayed or not taken, the threat of exposure of CERCLA contaminants to human populations and the environment will continue from soil and groundwater media. Contamination may migrate from IRP Site 9 to nearby areas by wind erosion, water erosion, or by leaching of chemicals to groundwater.

If action should be delayed or not taken, contamination would be allowed to continue to migrate beyond known locations, thereby potentially resulting in a greater volume of material to be remediated. This situation would result in an increase in excavation, groundwater treatment, and disposal costs.

VII. PUBLIC INVOLVEMENT

The Navy circulated the draft action memorandum and the administrative record for public comment. The public comment period on the draft action memorandum was from July 29, 2004 to August 29, 2004. The draft document was available for public review at the following location:

Naval Base Ventura County
Environmental Division, B-613
Environmental Division, Code N45V
311 Main Road, Suite #1
Point Mugu, California
(805) 989-3806

The Navy did not receive any comments from the public on the draft action memorandum.

VIII. OUTSTANDING POLICY ISSUES

There are currently no outstanding policy issues affecting this TCRA.

IX. RECOMMENDATION

This action memorandum was prepared in accordance with current EPA and Navy guidance documents for TCRAs under CERCLA (EPA 1990b; Navy 1996) and complies with California's RAW requirements. The purpose of this action memorandum is to identify and analyze removal actions necessary to address Stockpile B soils at IRP Site 9. One alternative was identified and evaluated for this TCRA: soil removal and disposal.

This interim removal action is recommended because it meets the criteria of effectiveness, implementability, and cost, as described in Section V. The proposed alternative provides short- and long-term effectiveness for the protection of human health and the environment from chemicals in soil by removing contaminated soil from the affected areas and disposing of the soil at an off-site disposal facility. This alternative does not have any technical or administrative implementation constraints. The proposed alternative has an estimated total cost of approximately $1,300,000.

This decision document represents an interim removal action for Stockpile B soils at IRP Site 9 at CBC Port Hueneme. The removal action was developed in accordance with CERCLA, as amended, and is consistent with the NCP. This decision is based on the administrative record for the site.

	2 SEP 04
Captain Paul S. Grossgold Commanding Officer Naval Base Ventura County	Date

X. REFERENCES

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APPENDIX A
SAMPLING DATA

Table A-1: Results of Analysis for Semivolatile Organic Compounds in Stockpile B

Table A-2: Results of Analysis for Volatile Organic Compounds in Stockpile B

Table A-3: Results of Analysis for Pesticides in Stockpile B

Table A-4: Results of Analysis for Polychlorinated Biphenyls in Stockpile B

Table A-5: Results of Analysis for Total Petroleum Hydrocarbons in Stockpile B

Table A-6: Results of Analysis for Metals in Stockpile B

Table A-7: Results of Waste Extraction Test Solubility Analyses

Sources: West Coast 2003a, 2003b

TABLE A-1: RESULTS OF ANALYSIS FOR SEMIVOLATILE ORGANIC COMPOUNDS IN STOCKPILE B

Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Butylbenzylphthalate	Phenol	1,2,4-Trichlorobenzene	2-Methylnaphthalene	Phenanthrene
B1-7	<0.10	0.35	---	---	---
B3-9	<0.10	0.27	---	---	---
B4-7	<0.10	0.57	---	---	---
B5-3	0.44	0.7	---	---	---
B6-3	<0.10	1.1	---	---	---
S1-Comp	---	---	<0.10	<0.10	<0.10
S2-Comp	---	---	<0.10	<0.10	<0.10
S3-Comp	---	---	<0.10	6.4	1.1
S1-S1	---	---	2.2	<0.10	<0.10
S1-S2	---	---	<0.10	<0.10	<0.10
S1-EX1	---	---	<0.10	<0.10	<0.10
S1-EX2	---	---	<0.10	<0.10	<0.10
S1-EX3	---	---	<0.10	<0.10	<0.10
S2-S1	---	---	<0.10	<0.10	<0.10
S2-S2	---	---	<0.10	<0.10	<0.10
S2-EX1	---	---	<0.10	<0.10	<0.10
S3-S1	---	---	<0.10	<0.10	<0.10
S3-S2	---	---	<0.10	<0.10	<0.10
S3-EX1	---	---	<0.10	<0.10	<0.10
S3-EX2	---	---	<0.10	<0.10	<0.10

Notes: All results in milligrams per kilogram; results for butylbenzylphthalate and phenol by U.S. Environmental Protection Agency Method 8270

--- Not analyzed

Comp Composite sample taken from slot-cut excavation stockpile

S1 Slot number (for example Slot Number 1)

TABLE A-2: RESULTS OF ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS IN STOCKPILE B
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Benzene	Toluene
B1-7	0.0071	<0.005
B7-1	0.01	0.0055

Note: All results in milligrams per kilogram

TABLE A-3: RESULTS OF ANALYSIS FOR PESTICIDES IN STOCKPILE B
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	4,4'-DDD	4,4'-DDE	4,4'-DDT	Chlordane
B1-7	0.02	0.013	0.1	0.1
B2-5	0.012	0.009	0.025	0.1
B3-9	0.0036	0.043	0.0061	<0.010
B4-7	0.0055	0.02	0.038	<0.010
B5-3	<0.003	<0.003	0.0047	<0.010
B6-3	0.024	0.016	0.036	0.35
B7-1	0.0091	0.012	0.024	0.22

Notes: All results in milligrams per kilogram, unless otherwise specified by U.S. Environmental Protection Agency Method 8081

DDD Dichlorodiphenyldichloroethane
DDE Dichlorodiphenyldichloroethene
DDT Dichlorodiphenyltrichloroethane

TABLE A-4: RESULTS OF ANALYSIS FOR POLYCHLORINATED BIPHENYLS IN STOCKPILE B
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260
B1-7	---	---	---	---	---	---	0.24
B2-5	---	---	---	---	---	---	2.1
B3-9	---	---	---	---	---	---	0.07
B4-7	---	---	---	---	---	---	0.13
B5-3	---	---	---	---	---	---	0.1
B6-3	---	---	---	---	---	---	0.46
S1-Comp	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	0.31
S2-Comp	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S3-Comp	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
S1-S1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S1-S2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S1-EX1	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S1-EX2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S1-EX3	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S2-S1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
S2-S2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S2-EX1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S3-S1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S3-S2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S3-EX1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
S3-EX2	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6

Notes: All results in milligrams per kilogram, unless otherwise specified

--- Not analyzed

Comp Composite sample taken from slot-cut excavation stockpile

S1 Slot number (for example Slot Number 1)

TABLE A-5: RESULTS OF ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS IN STOCKPILE B
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Gas Range C4-C12	Diesel Range C13-C22	Heavy Oil Range C23+
B1-7	<0.5	53	320
B2-5	<0.5	210	230
B6-3	<0.5	220	530
B7-1	<0.5	25	83
S1-Comp	<0.5	18	12
S2-Comp	<0.5	<10	<10
S3-Comp	54.1	650	38
S1-S1	<0.5	289	570
S1-S2	<0.5	230	240
S1-EX1	<0.5	<10	<10
S1-EX2	<0.5	<10	<10
S1-EX3	<0.5	<10	<10
S2-S1	<0.5	<10	<10
S2-S2	<0.5	<10	<10
S2-EX1	<0.5	<10	<10
S3-S1	<0.5	<10	<10
S3-S2	<0.5	<10	<10
S3-EX1	<0.5	<10	<10
S3-EX2	<0.5	<10	<10

Notes: All results in milligrams per kilogram

Comp Composite sample taken from slot-cut excavation stockpile
S1 Slot number (for example Slot Number 1)

TABLE A-6: RESULTS OF ANALYSIS FOR METALS IN STOCKPILE B
Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Silver	Tin	Vanadium	Zinc
B1-7	2.3	89	5.2	12	6.6	19	51	11	---	---	19	94
B2-5	3.1	66	3.6	12	5.1	92	45	9.5	---	---	19	130
B3-9	0.82	26	<3	3.8	2.2	7.8	5.8	4.3	---	---	7	19
B4-7	1.4	41	<3	3.9	3.9	9.1	12	6.6	---	---	11	30
B5-3	1.9	45	<3	3.7	3.7	9.3	7.2	8.2	---	---	14	31
B6-3	2.5	79	4.2	6	6	32	78	12	---	---	19	150
B7-1	8.8	100	18	11	11	200	540	49	---	---	21	19,600
S1-Comp	1.8	50	<3	10	4.2	18	42	8.1	<2	<4	9.1	180
S2-Comp	3.2	43	3.4	9.3	4.8	84	47	11	<2	<4	13	140
S3-Comp	5.5	50	<3	9.0	4.1	110	52	8.9	<2	<4	9.2	140
S1-S1	1.2	130	3.5	<3	9.6	1,810	500	31	4.7	<4	<1	2,700
S1-S2	<0.5	11	<3	<3	1.6	5.9	21	5.2	<2	<4	<1	80
S1-EX1	9.9	120	6.9	15	7.4	1,760	200	29	<2	<4	14	1,390
S1-EX2	4.8	54	<3	8.0	4.1	8.6	4.3	8.4	<2	<4	12	28
S1-EX3	3.2	9.3	14	280	5.1	8,480	230	340	2.5	7.8	24	4,120
S2-S1	2.2	72	4.2	11	6.8	84	230	12	<2	<4	12	660
S2-S2	15	110	11	20	8.4	450	210	49	55	4.9	12	2,520
S2-EX1	1.2	35	71	42	2.9	7,090	60	15	<2	<4	21	500
S3-S1	4.0	51	3.7	14	4.9	800	78	9.9	<2	<4	12	360
S3-S2	3.6	63	5.1	14	4.8	95	75	14	<2	<4	11	200
S3-EX1	3.1	2.3	<3	97	<1	9,970	<3	6.1	<2	<4	15	340
S3-EX2	5.0	46	10	28	7.0	480	740	26	<2	<4	17	840

Notes: All results in milligrams per kilogram

Comp Composite sample taken from slot-cut excavation stockpile
S1 Slot number (for example Slot Number 1)

TABLE A-7: RESULTS OF WASTE EXTRACTION TEST SOLUBILITY ANALYSES

Action Memorandum for a Time-Critical Removal Action at IRP Site 9, Stockpile B, CBC Port Hueneme

Sample Name	Analyte	TTLC (mg/kg)	TTLC PQL (mg/kg)	STLC (mg/L)	STLC PQL (mg/L)	Cadmium	Copper	Lead	Nickel	Silver	Zinc
B1-7	Lead	51	3	1.9	0.9	---	---	---	---	---	---
B6-3	Lead	78	3	BQL	0.9	---	---	---	---	---	---
B7-1	Lead	540	3	11	0.9	---	---	---	---	---	---
B7-1	Cadmium	18	3	BQL	0.5	---	---	---	---	---	---
B7-1	Zinc	19,600	3	210	0.6	---	---	---	---	---	---
S1-Comp	---	---	---	---	---	NT	NT	NT	NT	NT	NT
S2-Comp	---	---	---	---	---	NT	NT	NT	NT	NT	NT
S3-Comp	---	---	---	---	---	NT	NT	1.6	NT	NT	NT
S1-S1	---	---	---	---	---	NT	61	23	NT	NT	89
S1-S2	---	---	---	---	---	NT	NT	NT	NT	NT	NT
S1-EX1	---	---	---	---	---	NT	5.0	5.4	NT	NT	NT
S1-EX2	---	---	---	---	---	NT	NT	NT	NT	NT	NT
S1-EX3	---	---	---	---	---	<0.5	110	7.5	<1	NT	64
S2-S1	---	---	---	---	---	NT	NT	3.0	NT	NT	NT
S2-S2	---	---	---	---	---	<0.5	2.2	4.5	NT	<1	83
S2-EX1	---	---	---	---	---	1.7	330	<0.9	NT	NT	NT
S3-S1	---	---	---	---	---	NT	50	3.7	NT	NT	NT
S3-S2	---	---	---	---	---	NT	NT	1.7	NT	NT	NT
S3-EX1	---	---	---	---	---	NT	200	NT	NT	NT	NT
S3-EX2	---	---	---	---	---	0.5	8.0	10	NT	NT	NT

Notes: All metals results in mg/kg. Waste extraction test data characterize soil for comparison with a particular waste disposal facility's waste acceptance criteria and are not used for comparison with action levels or cleanup levels. Sample names beginning with "S" did not receive the toxic characteristic leaching procedure but were given a dilution factor of 20.

---	Not analyzed
22 CCR	Title 22 of the *California Code of Regulations*, Chapter 11 (listed on laboratory analytical reports as California Assessment Manual Limits)
BQL	Below practical quantitation limit
Comp	Composite sample taken from slot-cut excavation stockpile
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
NT	Not tested
PQL	Practical quantitation limit
S1	Slot number (for example, Slot Number 1)
STLC	Soluble threshold limit concentration from 22 CCR
TTLC	Total threshold limit concentration from 22 CCR